



Thematic cluster of  
the Evaluation  
Knowledge Bank

EUROPEAN  
EVALUATION  
HELPDESK  
FOR RURAL DEVELOPMENT



# Interoperability

**Potential use of FMIS (Farm Management Information Systems) in monitoring and evaluation of the CAP**

**Interconnectivity of data bases: limits and benefits for the CAP evaluation**

# Evaluation Knowledge Bank: outputs dealing with interoperability and interconnectivity of data



**NIVA - Data interoperability for farmer performance measurement tool**

**NIVA - A farm registry tool for exchanging information and data among databases**



**DEMETER - The DEMETER Agricultural Information Model**



**MIND STEP - Database and Model Interfaces**

## NIVA - Data interoperability for farmer performance measurement tool



This tool is an application supporting interoperability between IACS and the Farm Management Information System (FMIS), including its farmer field book's sub-system. This exercise in interoperability aims to provide a tool measuring farmer's performance and the farmer's environmental 'footprint'. The tool is tested in Estonia and Italy.

An FMIS can be used from simple record keeping such as spraying, fertilisation and irrigation data and farm practices involving machinery (tilling, ploughing, mowing, etc.) up to more complex farm operation such as budgeting and finance, crop planning, traceability, quality assurance and others.

Such data may be collected as part of the farmers' book-keeping and management activities or as an obligation for proving cross-compliance and alignment with conditionalities.

[See more info](#)

## NIVA - A farm registry tool for exchanging information and data among databases



The tool is a data model to exchange information among the existing datasets related to IACS and other systems and complete a farm registry. The project analyses existing datasets related to IACS and will develop an architecture that can be integrated with other systems (e.g. FaST, official agricultural registers, official statistical surveys and smart farming applications) to achieve interoperability.

[See more info](#)



# Interoperability



## NIVA - Data interoperability for farmer performance measurement tool

- Widens the range of data by linking IACS and other information systems such as the FMISs.
- Provides information for beneficiaries and non-beneficiaries that is useful for counterfactual.



## NIVA - A farm registry tool for exchanging information and data among databases

- Links IACS and other official agricultural databases.
- When operational, it will unify a significant amount of multilevel (farmer, farm, plot) data and information.

## DEMETER - The DEMETER Agricultural Information Model



The DEMETER Agricultural Information Model (AIM) will expand interoperability of information among the following data domains: crop farms data, Earth Observation (EO) data, livestock data and traceability of products, meteorological and open spatial data, including weather data, agricultural machinery data, data on farmer's preferences including farmers' needs related to cost optimization, production issues, cost/benefit analysis of field operations (irrigation/fertilization), optimization on irrigation/fertilization strategies, disease monitoring, yield analysis, animal welfare tracking and others.

[See more info](#)

## MIND STEP - Database and Model Interfaces

MIND  
STEP



This tool aims to develop a suite of individual decision making (IDM) models addressing the farm level. These models need a variety of data. MIND STEP's approach is to design and set up database-specific interfaces instead of building 'one new big database'. The data products developed by MIND STEP provide interfaces which (a) access stand-alone databases (e.g., FADN), (b) access the databases of global models (e.g., GLOBIOM, MAGNET) and (c) connect various databases with models.

[See more info](#)



# Interoperability



## The DEMETER Agricultural Information Model

- Offers a multi-data source integration considering IoT, legacy systems, open data, geographical and satellite information to provide an open and interoperable data integration model.
- Makes data from different sources available through the interoperability of existing databases (data for all CAP Objectives).
- Provides access to new data that can address evaluation questions for significant policy interventions.



## MIND STEP – Database and Model Interfaces

- Offers access to multiple databases
- Includes interfaces which (a) access databases, (b) access the databases of global models and (c) connect various databases with models
- Evaluators will have better access to stand-alone databases like FADN and databases linked to European and global scale models such as the GLOBIOM and MAGNET

## Data to support difficult to estimate impact and result indicators can be drawn from FMISs (PMEF reference)



Examples:

- I.15 Gross nutrient balance on agricultural land  
*(information on fertilisers, time of application, quantities, etc.)*
- I.14 Ammonia emissions from agriculture  
*(time of ammonia application, types of fertiliser, quantities)*

## Data to support new impact indicators



Examples:

- I.09 Agricultural sector resilience progress indicator
- I.18 Risk, use and impacts of pesticides  
*(data on pesticide including active substance)*
- I.28 Sales/use of antimicrobials for food-producing animals  
*(use of antimicrobials)*
- I.29 Value of production under EU quality schemes and organic production  
*(quantities, prices, outlets and marketing channels)*

## Data to support higher tier and more precise and accurate estimations



Examples:

- I.10 Greenhouse gas emissions from agriculture  
*(activity data from FADN or survey complemented by FMIS data on farm practices)*
- I.13 Percentage of agricultural land in moderate and severe soil erosion  
*(data on farm practices especially till and mowing)*



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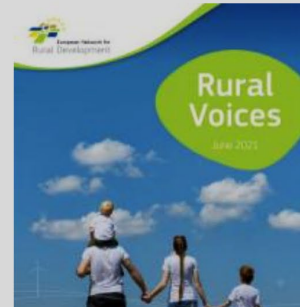
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## Rural Voices report

The 'Rural Voices' report provides a qualitative analysis of the findings from stakeholder workshops contributing to the long-term vision for rural areas.



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Insights into various outputs developed in initiatives and projects at the EU and Member States levels concerning data infrastructures and data use.

A quick guide on potential use, showing how these outputs could be used for monitoring and evaluation of the CAP.

## TOOLS

- Project Database
- Evaluation Knowledge Bank**
- Share your Rural Story
- LAG Database
- CLLD Partner Search